

## РАЗДЕЛ 1. ИСТОРИЯ ОБРАЗОВАНИЯ И ПЕДАГОГИЧЕСКОЙ МЫСЛИ

### CRITICAL THINKING: A LITERATURE REVIEW

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Critical thinking is not a new term, in fact it has been a particular concern in Russian literature' history. G. A. Gukovski<sup>1</sup> recorded the history of the formation, development of critical thinking skill and disposition has been start in the XVIII century. And recently has receiving a lot of attention in all levels of education in many country, particularly Southeast Asia<sup>2</sup>. Probably the existence of the Partnership for 21st Century Skills<sup>3</sup> (P21) has played a role in expanding the critical thinking movement. P21 has identified critical thinking as one of several learning and innovation skills necessary to prepare students for post-secondary education and the professional field. Therefore, the learning paradigm should shift from conventional learning that emphasizes the low level thinking skills toward learning that emphasizes learning higher-order thinking skills, especially critical thinking skills<sup>4</sup>. Despite of its importance, there is a notable lack of consensus regarding the definition of critical thinking. However, the purpose of this review is only display

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<sup>1</sup> Lai Emily R. Critical Thinking: A Literature Review. Research Report (2011) [Электронный ресурс]. URL: <http://images.pearsonassessments.com/images/tmrs/CriticalThinkingReviewFINAL.pdf> (дата обращения: March 24th, 2016).

<sup>2</sup> Watson- Glaser. Critical Thinking Appraisal User-Guide and Technical Manual UK Supervised and Unsupervised Versions 2012 [Электронный ресурс]. URL: <https://www.talentlens.co.uk/assets/news-and-events/watson-glaser-user-guide-and-technical-manual.pdf> (дата обращения: January 2016).

<sup>3</sup> P21 is a national nonprofit organization that advocates for 21st century readiness for every student. P 21 recognizes that all learners need educational experiences in school and beyond, from cradle to career, to build knowledge and skills for success in a globally and digitally interconnected world. Representing over 5 million members of the global workforce, P21 unites business, government and education leaders from the U.S. and abroad to advance evidence-based education policy and practice and to make innovative teaching and learning a reality for all. Cited from this link: [http://www.p21.org/about-us/p21-faq#what\\_partnership](http://www.p21.org/about-us/p21-faq#what_partnership).

<sup>4</sup> Paul R., Elder L. 30 Days to Better Thinking and Better Living Through Critical Thinking: a Guide for Improving Every Aspect of Your Life, Revised and Expanded. 2012 [Электронный ресурс]. URL: <https://books.google.ru/books?id=KMG-oi9iQKQC&printsec=frontcover&hl=id#v=onepage&q&f=false> (дата обращения: March 26<sup>th</sup> 2016).

a small part of the broad consensus among critical thinking theoreticians that has been purposed as the goal of education. In basically the review start to (a) explore definition of critical thinking from certain approaches, (b) see the relation of critical thinking with other concept (c) learn how teacher taking a part of the development of critical thinking skills in their students, and (d) introduce some variant of critical thinking skills test.

### Definition of Critical Thinking.

#### Theoretical Background.

The literature on critical thinking has roots in two primary academic disciplines: philosophy and psychology. Sternberg has also noted a third critical thinking strand within education domains. Each of these academic string have developed different approaches to defining critical thinking that based on their respective concerns<sup>56</sup>.

#### The philosophical approach.

The writings of Socrates, Plato, Aristotle, and more recently, Matthew Lipman and Richard Paul, exemplify the philosophical approach. This approach focuses on the hypothetical critical thinker, enumerating the qualities and characteristics of this person rather than the behaviors or actions the critical thinker can perform. Sternberg has noted that this school of thought approaches the critical thinker as an ideal type, focusing on what people are capable of doing under the best of circumstances. Accordingly, Richard Paul proposed the ideal critical thinker is someone with inquisitive in nature, open-minded, flexible, fair-minded, has a desire to be well-informed, understands diverse viewpoints, and is willing to both suspend judgment and to consider other perspectives<sup>7</sup>. These approach also emphasize qualities or standards of thought (formal rules) on truth seeking. To get to the truth, critical thinkers must become comfortable with ambiguity – questions do not always have clear, definitive answers. Mostly, this approach formulated critical thinking as;

<sup>5</sup> Redhana I. W., Liliyasi. Program Pembelajaran Keterampilan Berpikir Kritis Pada Topik Laju Reaksi untuk Siswa SMA.: Journal Forum Kependidikan. 2008. Vol. 27. № 2; Rezaei S., Derakhshan A., Bagherkazemi M. Critical Thinking in Language Education, Journal of Language Teaching and Research, Vol. 2, No 4, pp. 769-777, July 2011. Retrieved from: <http://www.academypublication.com/issues/past/jltr/vol02/04/06.pdf> (дата обращения: February 28th, 2016).

<sup>6</sup> Davies Jamie. Teaching Critical Thinking in Psychology [Электронный ресурс]. URL: <http://jamiedavies.co/wp-content/uploads/2013/08/PSY710-final-no-front.pdf> (дата обращения: March 25<sup>th</sup>, 2016); Ennis R. H. Critical Thinking Assessment: Journal Theory into Practice Vol. 32 Number 3, Summer (1993) [Электронный ресурс]. URL: <http://www3.qcc.cuny.edu/WikiFiles/file/Ennis%20Critical%20Thinking%20Assessment.pdf> (дата обращение: February 2016).

<sup>7</sup> Paul R., Elder L. 30 Days to Better Thinking and Better Living Through Critical Thinking: a Guide for Improving Every Aspect of Your Life, Revised and Expanded. 2012 [Электронный ресурс]. URL: <https://books.google.ru/books?id=KMG-oigiQKQC&printsec=frontcover&hl=id#v=onepage&q&f=false> (дата обращения: March 26<sup>th</sup> 2016).

«Critical thinking is, in short, self-directed, self-disciplined, self-monitored, and self-corrective thinking»<sup>8</sup>.

«The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honesty on facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking result which are as precise as the subject and the circumstances of inquiry permit» (APA, 1990)<sup>9</sup>.

One limitation of this approach to defining critical thinking is that it does not always correspond to reality. By emphasizing the ideal critical thinker and what people have the capacity to do, this approach may have less to contribute to discussions about how people actually think<sup>10</sup>.

The cognitive psychological approach.

The cognitive psychological approach contrasts with the philosophical perspective in two ways. First, cognitive psychologists, particularly those immersed in the behaviorist tradition and the experimental research paradigm, tend to focus on how people actually think versus how they could or should think under ideal conditions. Second, rather than defining critical thinking by pointing to characteristics of the ideal critical thinker or enumerating criteria or standards of «good» thought, those working in cognitive psychology tend to define critical thinking by the types of actions or behaviors critical thinkers can do<sup>11</sup>.

For Sternberg to bring up critical thinking process involves three component of thought: meta-components, components performance, and knowledge acquisition strategy. Meta-components refer to the process of higher mental order by the people who used to use plan (coherent strategy), monitor, and evaluate (utilizing feedback) regarding their action in problem solving; Performance components refer to actual steps taken or strategies used, these include encoding, comparing, inferring relation, mapping, applying, justifying, and responding the stimuli.

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<sup>8</sup> Redhana I. W., Liliarsari. Program Pembelajaran Keterampilan Berpikir Kritis Pada Topik Laju Reaksi untuk Siswa SMA.: Journal Forum Kependidikan, Vol. 27, Nomor 2, Maret 2008. Rezaei S., Derakhshan A., Bagherkazemi M. Critical Thinking in Language Education, Journal of Language Teaching and Research, Vol. 2, No. 4, pp. 769-777, July 2011 [Электронный ресурс]. URL: (дата обращения: February 28<sup>th</sup>, 2016).

<sup>9</sup> Fasco D. Jr. Critical Thinking and Moral Reasoning: Can you have one without the other? [Электронный ресурс]. URL: <http://files.eric.ed.gov/fulltext/ED391782.pdf> (дата обращения: February 2016); Gukovski G. Русская литературно-критическая мысль в 1730—1750-е годы.

<sup>10</sup> Paul R., Elder L. 30 Days to Better Thinking and Better Living Through Critical Thinking: a Guide for Improving Every Aspect of Your Life, Revised and Expanded. [Электронный ресурс]. URL: <https://books.google.ru/books?id=KMG-oi9iQKQC&printsec=frontcover&hl=id#v=onepage&q&f=false> (дата обращения: March 26<sup>th</sup> 2016).

<sup>11</sup> Там же.

While knowledge-acquisition strategies refers to the way in which individuals relate old to new material, and apply new material. Though, Sternberg doesn't determine «how» approach to teaching and learning skills of critical thinking, yet he gives general guidelines to develop or selecting a program or curriculum that will develop the critical thinking skill. Furthermore, Ennis declare that to help students develop critical thinking skills, teacher must understand the cognitive processes that constitute critical thinking and use instruction activities to develop these process. He recommended an instructor should teach students how to define and clarify information, ask the appropriate questions to clarify or challenge statements or beliefs, assess the credibility sources, and solve the problem with predicting possible results through logic or deduction. Ennis also suggests that critical thinkers demonstrate particular attributes, as below:

- Be capable of taking a position or changing a position as evidence dictates.

- Remain relevant to the point.

- Seek information as well as precision in information.

- Be open minded.

- Take the entire situation into account.

- Keep the original problem in mind.

- Search for reasons.

- Deal with the components of a complex problem in an orderly manner.

- Seek a clear statement of the problem.

- Look for options.

- Exhibit sensitivity to others' feelings and depth of knowledge.

- Use credible sources.

Critical thinkers use these skills appropriately and usually without prompting. They are generally predisposed to think critically and to evaluate the outcome of their thought processes.

«Reasonable reflective thinking focused on deciding what to believe or do»<sup>12</sup>.

The educational approach.

Finally, educational approach also have contributes in enriching the sense of critical thinking. Educational approach claim the need of focusing on 'knowing how', rather than 'knowing what'; learning how to learn. It is important in helping students to develop their capacity to think and act creatively. Many educators utilized Bloom's taxonomy as a guide

<sup>12</sup> Facione P.A., Giancarlo C.A., Facione N.C., Gainen J. The Disposition Toward Critical Thinking [Электронный ресурс]. URL: [https://www.google.ru/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=oahUKEwjn6qJx-HLAhXr\\_XIKHRslCN0QFggBMAA&url=http%3A%2F%2Fsite.insightassessment.com%2Fcontent%2Fdownload%2F789%2F4985%2Ffile%2FDisposition\\_to\\_CT\\_1995\\_JGE.pdf&usq=AFQjCNGhtZA62t1fH7meZAG2iWLHfr-PZw&sig2=CqkalfVScavtMrvVttDjaw](https://www.google.ru/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=oahUKEwjn6qJx-HLAhXr_XIKHRslCN0QFggBMAA&url=http%3A%2F%2Fsite.insightassessment.com%2Fcontent%2Fdownload%2F789%2F4985%2Ffile%2FDisposition_to_CT_1995_JGE.pdf&usq=AFQjCNGhtZA62t1fH7meZAG2iWLHfr-PZw&sig2=CqkalfVScavtMrvVttDjaw) (дата обращения: February 2016).

in structuring their teaching and assessing higher-order thinking skills. Bloom's taxonomy is hierarchical, with "comprehension" at the bottom and "evaluation" at the top. The three highest levels (analysis, synthesis, and evaluation) are frequently said to represent critical thinking<sup>13</sup>.

The excess of this approach is based on years of classroom experience and observations of student learning, unlike the two previous approaches – philosophical and the psychological traditions. However, some have noted that the educational approach is limited in its vagueness<sup>14</sup>. Ennis criticized that the level are not really hierarchical, as suggested by the theory, but rather are interdependent. For example, although synthesis and evaluation generally do require analysis, analysis generally requires synthesis and evaluation.

#### Relationships to Other Concepts.

Critical thinking is considered as important element of all academic fields and professional fields, here is a view of connections to other skills commonly appeal in many studies, including metacognition, motivation, language, moral and creativity.

#### Metacognition.

Metacognition has been defined most simply as "thinking about thinking." It's an ability to monitor the quality of critical thinking and strategy use by asking the question; What do I already know? What is my goal? How will I know when I get there? Am I making progress? These questions have been argues as the self-regulation, which is the link between thinking and metacognition<sup>15</sup>

#### Motivation.

Critical thinking is also related to motivation. For example, most researchers view critical thinking as including both, abilities, and dispositions. The disposition to think critically has been defined as the "consistent internal motivation to engage problems and make decisions by using critical thinking"<sup>16</sup>. And more, Garcia study about the relationship between motivation, deep strategy use and critical thinking that

<sup>13</sup> Bloom Taxonomy and Critical Thinking [Электронный ресурс]. URL: [http://www.open.edu/openlearnworks/pluginfile.php/5915/mod\\_resource/content/1/Bloom\\_s\\_Critical\\_Thinking\\_Across\\_the\\_Curriculum2.pdf](http://www.open.edu/openlearnworks/pluginfile.php/5915/mod_resource/content/1/Bloom_s_Critical_Thinking_Across_the_Curriculum2.pdf) (дата обращения: March 2016).

<sup>14</sup> Facione P.A., Giancarlo C.A., Facione N.C., Gainen J. The Disposition Toward Critical Thinking [Электронный ресурс]. URL: [https://www.google.ru/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjn6qjJx-HLAhXr\\_XIKHRslCNoQFggBMAA&url=http%3A%2F%2Fsite.insightassessment.com%2Fcontent%2Fdownload%2F789%2F4985%2Ffile%2FDisposition\\_to\\_CT\\_1995\\_JGE.pdf&usg=AFQjCNGhtZA62t1fH7meZAG2iWLHfr-PZw&sig2=CqkalfVScavtMrvVtDjaw](https://www.google.ru/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjn6qjJx-HLAhXr_XIKHRslCNoQFggBMAA&url=http%3A%2F%2Fsite.insightassessment.com%2Fcontent%2Fdownload%2F789%2F4985%2Ffile%2FDisposition_to_CT_1995_JGE.pdf&usg=AFQjCNGhtZA62t1fH7meZAG2iWLHfr-PZw&sig2=CqkalfVScavtMrvVtDjaw) (дата обращения: February 2016).

<sup>15</sup> Paul R., Elder L. 30 Days to Better Thinking and Better Living Through Critical Thinking: a Guide for Improving Every Aspect of Your Life, Revised and Expanded. [Электронный ресурс]. URL: <https://books.google.ru/books?id=KMG-oi9iQKQC&printsec=frontcover&hl=id#v=onepage&q&f=false> (дата обращения: March 26<sup>th</sup> 2016).

<sup>16</sup> Fasco D. Jr. Critical Thinking and Moral Reasoning: Can you have one without the other? [Электронный ресурс]. URL: <http://files.eric.ed.gov/fulltext/ED391782.pdf> (дата

focusing on students' strategies for learning have also contributed the understanding of both concept<sup>17</sup>.

#### Moral and Creativity.

The grounded theory between critical thinking and moral is places human capacity to reason in basic morality matters. Human actively form 'reason' or 'meaning' from their social environment as a result of the experience being more mature phases in morality (morality development levels). For Kohlberg, moral judgement skills are helping people to decide what to do when their facing conflicting situation. However, Kohlberg holds that moral developments is not a simple process of maturing that occurs in parallel to the development of the brain, but it more individual needs to address issues through 'role taking' processes that ensure different perspectives and to use their reasoning skill. For this reason, many studies suggest that critical thinking is directly linked to moral judgment skills.

Finally, many studies also have reported that creativity is related to moral reasoning. For example, Doherty and Corsini, studied to four moral issues for undergraduate students, found that creativity scores were significantly and positively related to level of moral reasoning<sup>18</sup>. Furthermore, Paul and Elder noted that both creativity and critical thinking are aspects of «good», purposeful thinking. As such, critical thinking and creativity are two sides of the same coin. Good thinking requires the ability to generate intellectual products, which is associated with creativity. However, good thinking also requires the individual to be aware, strategic, and critical about the quality of those intellectual products<sup>19</sup>. As the authors note, "critical thinking without creativity reduces to mere skepticism and negativity, and creativity without critical thought reduces to mere novelty". Paul and Elder point out that, in practice, the two concepts are inextricably linked and develop in parallel. Accordingly, the authors believe both creative and critical thinking ought to be integrated during instruction<sup>20</sup>.

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обращения: February 2016); G. A. Gukovski (...). Русская литературно-критическая мысль в 1730–1750-е годы.

<sup>17</sup> Paul R., Elder L. The Miniature Guide to Critical Thinking & Tools [Электронный ресурс]. URL: [https://www.criticalthinking.org/files/Concepts\\_Tools.pdf](https://www.criticalthinking.org/files/Concepts_Tools.pdf) (дата обращения: January 2016).

<sup>18</sup> Garcia Teresa, Pintrich P. R. Critical Thinking and Its Relationship to Motivation, Learning Strategies, and Classroom Experience. [Электронный ресурс]. URL: <http://files.eric.ed.gov/fulltext/ED351643.pdf> (дата обращения: March 25th, 2016).

<sup>19</sup> Redhana I. W., Liliyasi. Program Pembelajaran Keterampilan Berpikir Kritis Pada Topik Laju Reaksi untuk Siswa SMA.: Journal Forum Kependidikan. 2008. Vol. 27. № 2; Rezaei, S., Derakhshan A., Bagherkazemi M. Critical Thinking in Language Education, Journal of Language Teaching and Research. 2011. Vol. 2. No. 4. Pp. 769-777; Retrieved from: <http://www.academypublication.com/issues/past/jltr/volo2/04/06.pdf> (дата обращения: February 28<sup>th</sup>, 2016).

<sup>20</sup> Sternberg, R. J. (1986). Critical thinking: Its nature, measurement, and improvement National Institute of Education. Retrieved from: <http://eric.ed.gov/PDFS/ED272882.pdf>.

### The Teachability of Critical Thinking.

There are two types approaches to the teaching of critical thinking; (1) refers to teaching students trainable and assessable reasoning skills and the process; (2) teaching students to cultivating in the disposition and awareness associated with critical thinking. To develop both types, teacher can help student to engage actively in the critical thinking processes by the using of the effective use of teacher' questions, discussion and reflection in a context that supports values inquiry<sup>21</sup>. In spite of these, Buskist and Irons (2008) giving five suggestions for teacher in teaching critical thinking.

a. For each and every core topic in class, provide students with problems to analyze or solve. It doesn't matter whether students tackle these problems in or out of the class—the important thing is that they have the opportunity to think critically about them.

b. Guide students in the development of their critical thinking skills with handouts (either paper or electronic) containing information about critical thinking techniques that particularly effective in solve problems and make informed decisions of the question or task (e.g., explain what it means to – consider alternative explanations; weigh the evidence; determine the truth or falsity the assumptions).

c. Be a role model by applying these methodologies to the subject matter. Students will have an opportunity to see critical thinking in their teacher's action.

d. Bring some daily topics that are relevant to the subject matter as a sample of critical thinking process.

e. Give a huge opportunity to students in practicing their critical thinking skills, including examinations and other graded assignments by some particular techniques, such as debate, problem solving, self-assessment assignments, and peer assessment assignments. Below is the short explanation of those techniques;

#### A. Debate/Forum/Discussion

The debates can inspire students' enthusiasm to critically reflect upon topics from different perspective. To optimizing the outcomes, provided (a) the topics are mainly controversial; (b) the topics are of relevance to the class and the subject matter; (c) the topics are interesting and motivating; (d) students know the discussion topics in advance; (e) students are given enough time to mull over the topic from different angles; (f) students have enough opportunities to express themselves freely and critically.

#### B. Media Analysis

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<sup>21</sup> Samancı N. K. A Study on the Link between Moral Judgment Competences and Critical Thinking Skills. *International Journal of Environmental & Science Education*, 10(2), 135-143 (2015). [Электронный ресурс]. URL: <http://files.eric.ed.gov/fulltext/EJ1063001.pdf> (дата обращения: January 2016).



Founding media analysis quite raising student awareness to the issues such as equality, discrimination, bias, censorship, marginalization, etc. providing that the abovementioned benchmarks are taken into consideration.

#### C. Problem Solving Tasks and Activities

To succeeding this activities, students need to work in pairs or groups to describe the content of discussion, to define the problem, to personalize the problem, to discuss the problem and its alternative solutions, and finally to evaluate the whole process.

#### D. Self-assessment & Peer-assessment Assignments

One way to alleviate the problem is to engage them in carefully guided self- and peer-assessment. Students should be given a chance to assess not only themselves but also others to enhance their critical thinking ability.

#### Test for Measuring Critical Thinking

Several test have been advanced that objective to measure critical thinking skills, some of them are as follows;

1. Watson-Glaser Critical Thinking Appraisal (by Watson and Glaser, 1980).

#### Key to Critical Thinking: Recognize Assumption

#### Evaluate Arguments

#### Draw Conclusion

2. Cornell Critical Thinking Test (by Ennis and Millman, 1971)<sup>22</sup>.

The test available in 2 level (X and Z), where level X is appropriate for secondary school, and level Z is for college students.

3. Test of Everyday Reasoning (by Peter A. Fasione)<sup>23</sup> The test is objective and reliable on measuring critical thinking skills, it is fit in for high school of the first two years of post-secondary education, and for adults of all ages in the general population.

#### Conclusion

Can be understand the calling of critical thinking as the goal of education. It is related and grounded in almost every aspect of life. Remember the wide possibilities to teach or train pupils to develop their critical thinking skill and also to drive the disposition to think critically, teacher as the nearest agent to pupils, should be know and confidence to create learning process that endorsing these skills.

<sup>22</sup> Facione P. A., Giancarlo C. A., Facione N. C., Gainen J. The Disposition Toward Critical Thinking [Электронный ресурс]. URL: [https://www.google.ru/?url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjn6qjJx-HLAhXr\\_XIKHRslCN0QFggBMAA&url=http%3A%2F%2Fsite.insightassessment.com%2Fcontent%2Fdownload%2F789%2F4985%2Ffile%2FDisposition\\_to\\_CT\\_1995\\_JGE.pdf&usg=AFQjCNGhtZA62t1fH7meZAG2iWLHfr-PZw&sig2=CqkalfVScavtMrvVtdJjaw](https://www.google.ru/?url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjn6qjJx-HLAhXr_XIKHRslCN0QFggBMAA&url=http%3A%2F%2Fsite.insightassessment.com%2Fcontent%2Fdownload%2F789%2F4985%2Ffile%2FDisposition_to_CT_1995_JGE.pdf&usg=AFQjCNGhtZA62t1fH7meZAG2iWLHfr-PZw&sig2=CqkalfVScavtMrvVtdJjaw) (дата обращения: February 2016).

<sup>23</sup> Fasco D. Jr. Critical Thinking and Moral Reasoning: Can you have one without the other? [Электронный ресурс]. URL: <http://files.eric.ed.gov/fulltext/ED391782.pdf> (дата обращения: February 2016); Gukovski G. A. Русская литературно-критическая мысль в 1730–1750-е годы.